

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	
Stephan Geiger et al.	)	Group Art Unit: 2811
Application No.: 10/527,704	)	Examiner:
Filed: March 11, 2005	)	Confirmation No.: 5281
For: DIODE-PUMPED SOLID STATE LASER	)	

**REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT**

Commissioner for Patents  
Office of Initial Patent Examination  
Customer Service Center  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed is a copy of the Official Filing Receipt marked in red to show corrections that are needed. The corrections are as follows:

Please add the Assignment For Published Patent Application - -TUI Laser AG, Germering, Germany- -; and

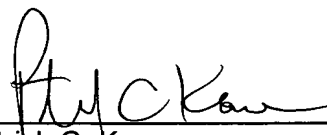
please change the title to - -Diode-pumped solid-state laser- -.

Issuance of a corrected Official Filing Receipt is respectfully requested.

Respectfully submitted,

BUCHANAN INGERSOLL PC

Date: February 9, 2006

By:   
Patrick C. Keane  
Registration No. 32,858

P.O. Box 1404  
Alexandria, Virginia 22313-1404  
(703) 836-6620



UNITED STATES PATENT AND TRADEMARK OFFICE

1033033-000025

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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/527,704	09/15/2005	2811	1030	033033-025	1	9	1

CONFIRMATION NO. 5281

21839

BUCHANAN INGERSOLL PC  
(INCLUDING BURNS, DOANE, SWECKER & MATHIS)  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

## FILING RECEIPT



\*OC000000017991931\*

Date Mailed: 02/06/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Stephan Geiger, Prittlbach, GERMANY;  
Martin Paster, Ebersberg, GERMANY;  
Siegfried Freer, Germering, GERMANY;

Assignment For Published Patent Application  
TUL Laser AG, Germering, Germany

Power of Attorney: The patent practitioners associated with Customer Number 21839.

## Domestic Priority data as claimed by applicant

This application is a 371 of PCT/EP03/10056 09/10/2003

## Foreign Applications

GERMANY 102 41 986.8 09/11/2002

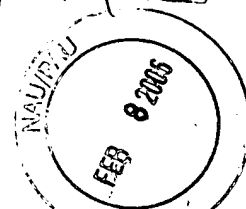
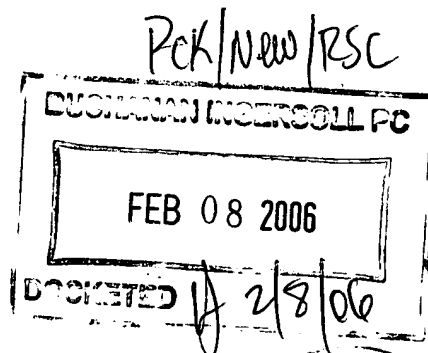
Projected Publication Date: 05/18/2006

Non-Publication Request: No

Early Publication Request: No

## Title

Multimode solid laser pumped longitudinally by diodes —  
Diode - pumped Solid - State Laser



**Preliminary Class**

257

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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Title 35, United States Code, Section 184  
Title 37, Code of Federal Regulations, 5.11 & 5.15**

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## PCT Postcard

Applicant/

Inventor: Stephan Geiger et al.

Docket No.: 033033-025

Title: DIODE-PUMPED SOLID STATE LASER

FEB 09 2006

DT07 Rec'd PCT/PTO 1 1 MAR 2005

Appln. No.:

Date: March 11, 2005

10/527704

Dkt. Clerk Initials



The following was/were received in the U.S. Patent and Trademark Office on the date stamped hereon:

- ☐ Transmittal Letter to the U.S. Receiving Office/Response to Invitation (PTO-1382)
- ☒ Transmittal Letter to U.S. Designated/Elected Office (DO/EO/US) Concerning Filing Under 35 USC 371 (PTO-1390)
- ☐ PCT Request (PCT/RO/101) ( ) pgs.
- INCLUDING:
- ☒ Specification (pages 1 - 7 )
- ☒ Claims (claims(s) 1 - 9 , 2 pgs.)
- ☒ Drawings (Fig(s). 1 - 1 , 1 pgs.)
- ☒ Abstract of the Disclosure
- ☐ PCT Fee Calculation Sheet Annex to the Request (PCT/RO/101 (Annex))
- ☐ PCT Demand (PCT/IPEA/401) International Preliminary Examination Report
- ☐ PCT Fee Calculation Sheet Annex to Demand for Int'l. Preliminary Exam. (PCT/IPEA/401 (Annex))

- ☐ PCT Notice of Confirmation of Precautionary Designations (PCT/RO/144)
- ☐ Executed Declaration/Power of Attorney
- ☐ Unexecuted Declaration/Power of Attorney
- ☐ Assignment/Assignment Recordation Form Cover Sheet (PTO-1595)
- ☐ Appointment of Agent
- ☒ Preliminary Amendment
- ☐ Information Disclosure Statement Transmittal
- ☒ Information Disclosure Citation (PTO-1449)
- ☒ Information Disclosure Statement w/ 0 document(s)
- ☒ Patent Application Data Sheet
- ☒ Gen. Authorization for Petition for Ext. of Time and Payment of Fees
- ☐ Diskette

- ☐ Check for \$ \_\_\_\_\_ is enclosed
- ☐ Check for \$ \_\_\_\_\_ is enclosed
- ☐ Charge \$ \_\_\_\_\_ to Deposit Account
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- ☒ pct/isa/210

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## PCT Postcard

Applicant/

Inventor: Stephan Geiger et al.

Docket No.: 033033-025

Working Atty.: Patrick C. Keane / rsc

Title: DIODE-PUMPED SOLID STATE LASER

Appln. No.:

Date: March 11, 2005

83

Dkt. Clerk Initials

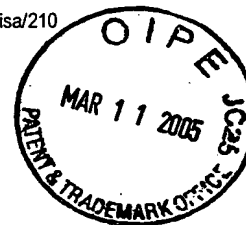


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- ☒ Drawings (Fig(s). 1 - 1 , 1 pgs.)
- ☒ Abstract of the Disclosure
- ☐ PCT Fee Calculation Sheet Annex to the Request (PCT/RO/101 (Annex))
- ☐ PCT Demand (PCT/IPEA/401) International Preliminary Examination Report
- ☐ PCT Fee Calculation Sheet Annex to Demand for Int'l. Preliminary Exam. (PCT/IPEA/401 (Annex))

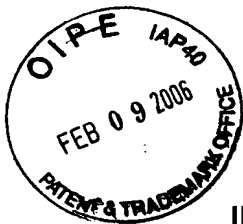
- ☐ PCT Notice of Confirmation of Precautionary Designations (PCT/RO/144)
- ☐ Executed Declaration/Power of Attorney
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- ☐ Assignment/Assignment Recordation Form Cover Sheet (PTO-1595)
- ☐ Appointment of Agent
- ☒ Preliminary Amendment
- ☐ Information Disclosure Statement Transmittal
- ☒ Information Disclosure Citation (PTO-1449)
- ☒ Information Disclosure Statement w/ 0 document(s)
- ☒ Patent Application Data Sheet
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Patent  
Attorney's Docket No. 033033-025

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	Group Art Unit: Unassigned
Stephen GEIGER et al.	)	Examiner: Unassigned
Application No.: Unassigned	)	Confirmation No.: Unassigned
Filed: March 11, 2005	)	
For: DIODE-PUMPED SOLID-STATE	)	
LASER (As Amended)	)	

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Prior to examination, kindly amend the above-captioned application as follows:

3-11-05  
CR  
Al3

**AMENDMENTS TO THE SPECIFICATION:**

Please replace the title with the following amended title:

~~"MULTIMODE SOLID-LASER PUMPED LONGITUDINALLY BY DIODES~~ DIODE-  
PUMPED SOLID-STATE LASER"

Please add the following new paragraph immediately after the title appearing on  
page 1.

This disclosure is based upon German Application No. 102 41 986.8, filed September  
11, 2002, and International Application No. PCT/EP2003/010056, filed September 10, 2003,  
the contents of which are incorporated herein by reference.

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently Amended) Diode-pumped solid-state laser having at least one intracavity positioned laser crystal (6) having at least one optical axis longitudinally to which at least one pumped-light beam emitted from at least one pumped-light source (7,8) is incident on said laser crystal (6), wherein said pumped-light beam has a beam diameter corresponding to at least 1.25 times the beam cross section of a laser beam forming inside the resonator (R) with the oscillation mode TEM<sub>00</sub>.

2. (Original) The diode-pumped solid-state laser according to claim 1, wherein the emerging laser beam possesses a beam quality of  $M^2 \geq 1.8$ .

3. (Currently Amended) The diode-pumped solid-state laser according to ~~claims 1 or 2~~ claim 1, wherein said TEM<sub>00</sub> mode beam diameter is defined by the mirror radii of the resonator mirrors (1,2), the length of said resonator, and said intracavity positioning of said laser crystal (6), and said beam diameter of said pumped-light beam is adjustable by means of an imaging optic (11).

4. (Currently Amended) The diode-pumped solid-state laser according to ~~one of the claims 1 to 3~~ claim 1, wherein an intracavity quality switch (3) in form of an acousto-optical or an electro-optical Q-switch is provided.



5. (Currently Amended) The diode-pumped solid-state laser according to ~~one of the claims 1 to 4~~ claim 1, wherein said asymmetrical optical resonator (~~R~~) has a convex-plane, convex-concave or convex-convex resonator construction.

6. (Currently Amended) The diode-pumped solid-state laser according to ~~one of the claims 1 to 5~~ claim 1, wherein said laser crystal (~~6~~) is doped with one or a multiplicity of the following doping substances: Nd, Yb, Cr, Tm, Ho or Er.

7. (Original) The diode-pumped solid-state laser according to claim 6, wherein said laser crystal comprises of the following crystals: Nd:YAG, Nd:YVO<sub>4</sub>, Nd:YLF, Nd:GVO<sub>4</sub>, Nd:YPO<sub>4</sub>, Nd:BEL, Nd:YALO, Nd:LSB, Yb:YAG, Yb:FAB, Cr:LiSAF, Cr:LiCAF, Cr:LiSGAF, Cr:YAG, Tm-Ho:YAG, Tm-Ho:YLF, Er:YAG, Er:YLF or Er:GSGG.

8. (Currently Amended) The diode-pumped solid-state laser according to ~~one of the claims 1 to 6~~ claim 1, wherein at least one of said pumped-light beams has a power of at least 5 Watt, preferably between 10 and 60 Watt.

9. (Currently Amended) Use of the diode-pumped solid-state laser according to ~~one of the claims 1 to 7~~ claim 1 for material processing, preferably for surface processing, such as surface material removal, surface modification, sintering, melting or preferably to process volume material, such as selectively cracking.

REMARKS

By way of the foregoing amendments, the specification has been amended to incorporate the priority information. The title has been amended to conform to the English language translation. Claims 1, 3-6, 8 and 9 have been amended to delete multiple dependencies, and to otherwise conform with conventional U.S. format. No new matter has been introduced by these changes.

It is requested that the application be examined on the basis of the specification, the title, and the claims as amended.

Early and favorable consideration with respect to this application is respectfully requested.

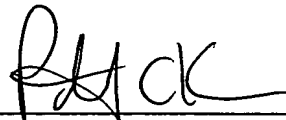
Should any questions arise in connection with this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: March 11, 2005

By: \_\_\_\_\_



Patrick C. Keane

Registration No. 32,858

P.O. Box 1404  
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